UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

ANNUAL COMPLIANCE REPORT

for

PUBLIC WATER SYSTEMS

in the

DISTRICT OF COLUMBIA

for

CALENDAR YEAR 2003

Customer Service Hotline: 1-800-438-2474

INTRODUCTION

The Drinking Water Program: An Overview

The U.S. Environmental Protection Agency (EPA) established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 and 1996 Amendments, EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs). For some regulations, EPA establishes treatment techniques in lieu of an MCL to control unacceptable levels of contaminants in water. The Agency also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the States or EPA. Generally, the larger the population served by a water system, the more frequent are the monitoring and reporting (M/R) requirements. In addition, EPA requires PWSs to monitor for selected unregulated contaminants to provide data for future regulatory development. Finally, EPA requires PWSs to notify the public when they have violated these regulations. The 1996 Amendments to the SDWA require public notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation and the possibility of alternative water supplies during the violation.

The SDWA applies to the 50 States, the District of Columbia, Indian Lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The SDWA allows States and Territories to seek EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. For a state to receive primacy, EPA must determine that the state meets certain requirements laid out in the SDWA and the regulations, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and a demonstration that they can enforce the program requirements. Of the 56 States and Territories, all but Wyoming and the District of Columbia have primacy. The EPA Regional Offices administer the PWSS Programs within these two jurisdictions. Thus, the EPA Region III Office, in Philadelphia, PA, administers the PWSS Program in the District of Columbia.

The 1986 SDWA Amendments gave Indian Tribes the right to apply for and receive primacy. EPA currently administers PWSS Programs on all Indian lands except the Navaho Nation, which was granted primacy in late 2000.

Annual State PWS Report

Each quarter, primacy states submit data to the Safe Drinking Water Information System (SDWIS/FED), an automated database maintained by EPA. The data submitted include, but are not limited to, PWS inventory information, the incidence of Maximum Contaminant Level,

Maximum Residual Disinfectant Level, monitoring, and treatment technique violations, and information on enforcement activity related to these violations. Section 1414(c)(3) of the Safe Drinking Water Act requires states to provide EPA with an annual report of violations of the primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, treatment techniques, variances and exemptions, significant monitoring violations, and significant consumer notification violations. The EPA Regional Offices report the information for Wyoming, the District of Columbia, and all Indian Lands but the Navaho Nation. EPA Regional offices also report Federal enforcement actions taken. Data retrieved from SDWIS/FED form the basis of this report.

DEFINITIONS

Public Water System

A Public Water System (PWS) is defined as a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of PWSs. PWSs can be community (such as cities and towns), nontransient noncommunity (such as schools or factories), or transient noncommunity systems (such as rest stops or parks). For this report when the acronym "PWS" is used, it means systems of all types unless specified in greater detail. **The principal community PWSs in the District of Columbia are the Washington Aqueduct Division of the U.S. Army Corps of Engineers (Aqueduct), and the District of Columbia Water and Sewer Authority (DC WASA).**

In addition to the above, EPA Region III has recently determined that four (4) facilities in the District which are owned and operated by the U.S. Navy are consecutive PWSs subject to the requirements of the SDWA. These systems, which purchase water from DC WASA, are: Naval Station Washington (Washington Navy Yard); Naval Station Washington (Anacostia); Naval Observatory; and Naval Security Station. These PWSs initiated compliance monitoring in calendar year 2004 and information about their compliance status will be included in the Annual Compliance Report for 2004.

Maximum Contaminant Level

Under the Safe Drinking Water Act, the EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs). **During calendar year 2003, no MCL violations occurred at any PWS in the District of Columbia.**

Maximum Residual Disinfectant Level

The EPA sets national limits on residual disinfectant levels in drinking water to reduce the risk of exposure to disinfection byproducts formed when public water systems add chemical disinfectant for either primary or residual treatment. These levels are known as Maximum Residual Disinfectant Levels (MRDLs). **During calendar year 2003, no MRDL violations occurred at any PWS in the District of Columbia.**

Treatment Techniques

For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants. For example, treatment techniques have been established for viruses, some bacteria, and turbidity. **During calendar year 2003, DC WASA incurred lead public education violations as described in the "Consumer Notification" section below. DC WASA also incurred a lead service line replacement violation for failure to replace the required number of lines during the first 12-month compliance period.**

Because the requirements for lead public education and lead service line replacement are included as "treatment techniques" in the Lead and Copper Rule (LCR), the violations incurred are listed as such in the LCR section of the table in Appendix B. No treatment technique violations occurred at the other PWSs in the District of Columbia during calendar year 2003.

Variances and Exemptions

Although variances and exemptions to specific requirements under the Safe Drinking Water Act Amendments of 1996 may be granted under certain circumstances, EPA has never issued any variances or exemptions to the public water systems in the District of Columbia. **Thus, during calendar year 2003, no violations of variances or exemptions occurred at any PWS in the District of Columbia.**

Monitoring

A PWS is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. If a PWS fails to have its water tested as required, or fails to report test results correctly to the primacy agent, a monitoring violation occurs.

Monitoring for most chemical contaminants is done at the point(s) where water from the water treatment plant(s) enters the water storage and distribution system. The exceptions are bacteriological contaminants, trihalomethanes, lead and copper which are monitored at specific locations in the distribution system. **During calendar year 2003, DC WASA incurred Lead and Copper Rule (LCR) monitoring violations which are described below and included in**

Appendix A. No monitoring violations occurred at the other PWSs in the District of Columbia.

Significant Monitoring Violations

For this report, significant monitoring violations are generally defined as any significant monitoring violation that occurred during the calendar year of the compliance report. A significant monitoring violation, with rare exceptions, occurs when no samples were taken or no results were reported during a compliance period. **During calendar year 2003, no significant monitoring violations occurred at any PWS in the District of Columbia.**

Consumer Notification

Every Community Water System is required by the Consumer Confidence Report Rule to deliver to its customers a brief annual water quality report. This report is to include some educational material, and will provide information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations. **During calendar year 2003, no consumer notification violations occurred at any PWS in the District of Columbia.**

Another form of consumer notification is required when a PWS conducts lead and copper tap sampling and exceeds the action level for lead. The PWS is required to implement a public education program concerning lead in drinking water for its customers. **During calendar year 2003, DC WASA incurred Lead and Copper Rule (LCR) lead public education violations which are described below and included in Appendix A. No lead public education violations occurred at the other PWSs in the District of Columbia.**

The Public Notification (PN) Rule requires a PWS that has incurred a violation, or violations, of the drinking water regulations to notify its customers about the violation(s) and to provide health advisory information. During calendar year 2003, DC WASA incurred PN Rule violations which are described below and included in Appendix A. No public notification violations occurred at the other PWSs in the District of Columbia.

Significant Consumer Notification Violations

For this report, a significant public notification violation occurred if a community water system completely failed to provide its customers the required annual water quality report. **During calendar year 2003, no significant consumer notification violations occurred at any PWS in the District of Columbia.**

DISTRICT OF COLUMBIA INFORMATION

Public Water Systems in the District of Columbia

There are two principal public water systems in the District of Columbia: 1) the Washington Aqueduct Division of the U.S. Army Corps of Engineers (the Aqueduct); and, 2) the District of Columbia Water and Sewer Authority (DC WASA). The Aqueduct owns and operates two water intakes on the Potomac River in Maryland, two water treatment plants in the District of Columbia, and three finished water storage reservoirs. The treatment plants, Dalecarlia and McMillan, can produce up to 340 million gallons per day (MGD) of potable water for the metropolitan Washington area.

The Aqueduct is a water wholesaler, and as such, has no distribution system of its own. Its primary customer is DC WASA, which owns and operates eight finished water storage facilities and the water distribution system within the District. (It should be noted that prior to the creation of DC WASA on October 1, 1996, the water distribution system was owned and operated by the former Water and Sewer Utility Administration (WASUA) which was part of the District of Columbia Department of Public Works.)

As described previously, EPA Region III has recently determined that four (4) facilities in the District which are owned and operated by the U.S. Navy are consecutive PWSs subject to the requirements of the SDWA. These systems, which purchase all of their water from DC WASA, are: Naval Station Washington (Washington Navy Yard); Naval Station Washington (Anacostia); Naval Observatory; and Naval Security Station.

In addition to DC WASA, the Aqueduct supplies water to three customer PWSs in the Commonwealth of Virginia: Arlington County, the City of Falls Church, and Ronald Reagan Washington National Airport. These customer water systems are regulated by the Virginia Department of Health which has primacy for implementation of the PWSS Program in the Commonwealth.

For reference in SDWIS, the water systems are listed below along with their PWS identification numbers:

DC0000001	Washington Aqueduct
DC0000002	District of Columbia Water and Sewer Authority
DC0000003	Naval Station Washington (Washington Navy Yard)
DC0000004	Naval Station Washington (Anacostia)
DC0000005	Naval Observatory
DC0000006	Naval Security Station
VA6013010	Arlington County Department of Public Works
VA6013080	Ronald Reagan Washington National Airport
VA6610100	City of Falls Church Department of Public Utilities

The Aqueduct produces an average of 180 MGD of drinking water for the water systems listed above which have a total population of about one million. The District, with a total

population of approximately 600,000, consumes about 75 per cent of the Aqueduct's production. Although the District has about 60 per cent of the population served by the Aqueduct, it uses more water because it has a large transient population of commuters and tourists.

Because the Aqueduct and DC WASA have individual responsibilities for complying with the SDWA, both systems need to work together to insure that the District's drinking water meets federal standards. The Aqueduct is responsible for compliance with all of the regulations which pertain to water treatment such as filtration, disinfection and chemical contaminant removal, and corrosion control. DC WASA is responsible for the regulations for total coliform, lead and copper, and disinfection byproducts, which are applicable to the distribution system. Thus the water treatment techniques applied by the Aqueduct directly affect the quality of the water in DC WASA's system.

The Aqueduct provides significant formal and informal assistance to DC WASA in complying with the monitoring and reporting requirements of the SDWA. The Aqueduct collects and provides analytical services for all of the required distribution system entry point samples for organic and inorganic chemical contaminants, which satisfies the requirements for itself as well as its customer PWSs. In addition, the Aqueduct provides contractual laboratory services for DC WASA. Laboratory staff collect and analyze all of the bacteriological and disinfection byproduct samples required for DC WASA's distribution system. Responsibility for compliance with lead and copper monitoring is split between the Aqueduct and DC WASA. DC WASA arranges for the collection of lead and copper samples at customers' taps and the Aqueduct laboratory provides the analyses as provided by its contract with DC WASA. Aqueduct and DC WASA staff collect and analyze the distribution system samples required for the assessment of optimal corrosion control treatment. On an annual basis, the Aqueduct's laboratory collects and analyzes over 35,000 samples for more than 125 parameters.

The Aqueduct compiles the results of the analyses of compliance samples. The Aqueduct includes some of the data in the monthly monitoring report it submits to EPA Region III. Other data is forwarded to DC WASA for their use in preparing the monthly and special monitoring reports which they submit to EPA Region III.

Previous SDWA Violations in the District of Columbia

The drinking water regulation known as the Total Coliform Rule (TCR) requires each PWS to collect monthly samples from representative sites in its distribution system for testing for the presence of coliform bacteria. Every coliform positive sample must also be tested to determine if it is positive for fecal coliform or *E. coli*. Every coliform positive sample must also be followed by additional repeat samples. The number of samples collected each month is dependent on the size of the population served. In the District of Columbia, a minimum of 210

samples must be collected and analyzed each month. A routine monthly violation of the TCR occurs if more than 5 per cent of the samples collected in a particular month are found to be total coliform positive. An acute violation of the TCR occurs if a total coliform positive sample is found to also be positive for fecal coliform or *E. coli*, and if any of the repeat samples are also coliform positive. (An acute violation can also occur if the initial sample is only coliform positive and any of the repeat samples is fecal coliform or *E. coli* positive.)

In the fall of 1995 and the summer of 1996, WASUA incurred several routine monthly and one acute TCR MCL violation. In addition, a sanitary survey of the District's water storage and distribution system conducted earlier in 1995 found numerous operational and maintenance deficiencies in the system. In response to these events, EPA Region III issued a notice of violation and proposed administrative order in November 1995 which directed WASUA to develop short and long term plans to correct the deficiencies. EPA Region III then began negotiating a final consent order with WASUA to finalize the plans for remediation and for upgrading the water storage and distribution system. Negotiations were completed and the order was signed in July 1996. WASUA exceeded the TCR monthly MCL (i.e., more than 5% of samples collected monthly were coliform positive) during June, July and August 1996. Region III determined that DC WASA had completed all of the requirements of the order and closed the order in 2003.

Neither WASUA nor its successor DC WASA had any TCR MCL violations from September 1996 through December 2003.

It should be noted that Region III had an open administrative order for the Washington Aqueduct since March 1994 (which was prior to the commencement of annual compliance reports in 1996). This order was issued in response to the Aqueduct's violation of the turbidity requirements of the Surface Water Treatment Rule (SWTR) in December 1993. In 1994, the Aqueduct submitted a modernization plan to EPA to comply with the order. According to one of the elements of this plan, the Aqueduct intended to construct a solids recovery facility to treat the residuals from the sedimentation basins. This facility would allow the Aqueduct to comply with future National Pollutant Discharge Elimination System (NPDES) permits which were expected to require substantial reductions in the amount of solids discharged to the Potomac River. The facility would also eliminate the accumulations of residuals in the basins which was one of the problems that led to the turbidity rule violation in December 1993.

The NPDES permit was ultimately reissued in 2003. This permit requires the Aqueduct to implement a process, or processes, to treat the basin residuals on a continuing basis. EPA had kept the order open to be sure that concerns about the effects of solids accumulation in the basins were addressed by the requirements of the new discharge permit. EPA believes that the discharge limits of the permit satisfy the concerns addressed by the administrative order. Therefore, Region III closed the order in 2003.

Lead and Copper Rule Compliance Actions

During the monitoring period which ended in June 2002, the District of Columbia Water and Sewer Authority (DC WASA) exceeded the lead action level (AL) with a 90th percentile of 0.075 mg/L. The Lead and Copper Rule (LCR) requires that no more than 10 per cent of the lead and copper samples collected during a defined monitoring period may exceed the lead and copper action levels (ALs). Thus, 90 percent of the samples must be equal to, or below the ALs, which are 0.015 mg/L for lead and 1.3 mg/L for copper. DC WASA has never exceeded the AL for copper. It should be noted that this exceedance is not a violation of the drinking water regulations. However, DC WASA was required to complete the following activities to insure its compliance with the LCR:

- Resume full monitoring for lead and copper at customers' taps in calendar year 2003.

- Prepare and deliver a public education (PE) program to advise consumers how they can protect themselves from exposure to lead in drinking water, and to inform the public regarding steps that will be taken to reduce the lead level.

- Develop and implement a lead service line replacement (LSLR) program. The service line is the underground pipe which connects the distribution system water main to a building. The service line pipe may be made, either entirely or in part, of lead, copper, bronze or other material. The LCR requires that a system that exceeds the lead AL after corrosion control treatment has been installed must annually replace seven percent of the total number of lead service lines (LSLs) in the system at the time of the exceedance. The LSLR program must continue each year until tap water monitoring indicates that the 90th percentile lead level is equal to or below 0.015 mg/L for two six-month monitoring periods, or until all of the LSLs have been replaced. The PWS must replace that portion of the LSL which it owns, which may be a portion of the LSL, or the entire LSL. In the District of Columbia, DC WASA owns that portion of the service line which is in public space. For some properties, the entire service line is in public space, but for the majority of properties only a portion of the line is in public space. The property owner is responsible for the portion of the service line which is in private space.

During calendar year 2003, EPA arranged for a contractor to review the corrosion control treatment process and recommend possible improvements or alternatives. The contractor developed a test protocol for DC WASA to use to determine the cause of the elevated lead levels. DC WASA began use of this protocol, which is described in the section below concerning "Corrosion Control Treatment," in December 2003.

A discussion of DC WASA's LCR compliance actions is provided below. An evaluation of these, and prior actions, is included in the "LCR Compliance Determination" section of this report.

<u>Lead and Copper Tap Sampling</u>

DC WASA conducted full monitoring for lead and copper at customers' taps in calendar year 2003, and exceeded the lead AL in both monitoring periods: 0.040 mg/L for the January 1 to June 30, 2003 monitoring period, and 0.063 mg/L for the July 1 to December 31, 2003 monitoring period. DC WASA did not exceed the copper AL in either monitoring period.

Public Education

This program was implemented in October 2002 with the publication of a brochure concerning lead in drinking water and the environment which was distributed to the public in the District of Columbia. This brochure was prepared with the cooperation of the District of Columbia Department of Health.

Because DC WASA continued to exceed the lead AL in 2003, it was required to continue its lead public education program on an annual basis. DC WASA was required to complete this program by September 30, 2003. The annual program included the requirement for the issuance of public service announcements (PSAs) concerning lead in drinking water every six months.

Lead Service Line Replacement

DC WASA implemented a plan to replace 1,615 lead service lines during its first compliance period for LSLR which was October 1, 2002 to September 30, 2003. DC WASA decided to also implement a LSL testing program. The LCR does not require the full or partial physical replacement of a LSL if the lead concentration in all water samples taken from that line is less than or equal to 0.015 mg/L. Furthermore, LSLs that meet this test criteria can be used to meet the replacement requirements of the LCR.

During the first LSLR compliance period of October 1, 2002 to September 30, 2003, DC WASA physically replaced 385 LSLs (79 full and 306 partial). A total of 1,241 LSLs were found to be equal to or below the lead AL and were considered to be replaced. Therefore, DC WASA reported that they had replaced a total of 1,626 LSLs during this compliance period. However, during the summer of 2004, EPA discovered that several hundred of the 1,241 LSLs which were considered to have been replaced, had been sampled using an incorrect protocol. EPA determined that these LSLs could not be considered as "replaced" and that DC WASA had not complied with the LSLR requirements for this compliance period.

It should be noted that DC WASA needed to test a total of 4,613 LSLs in order to find a sufficient number at or below the lead AL. This means that 2,987 (64.8 percent) were found to be above the lead action level. In many cases the test results were significantly higher than 0.015 mg/L.

DC WASA was also required to continue its LSLR program into its second compliance period for LSLR which is October 1, 2003 to September 30, 2004.

Corrosion Control Treatment

As described previously, EPA engaged a contractor to review the corrosion control treatment and recommend improvements. The contractor developed a test protocol for DC WASA to use to determine the source of the elevated lead levels. The LSL testing program revealed a significant problem involving the lead levels in the District's drinking water. The test results seemed to indicate that LSLs had more effect on the lead levels than was previously thought. This effect was confirmed when DC WASA implemented the recommendations of EPA's consultant and conducted lead profile testing at selected sites in December 2003 and January 2004. The profile testing found that lead levels remained high in consecutive samples which implicated the LSLs as the source of lead rather than the interior plumbing materials.

After the suspicion that LSLs were a significant source of the elevated lead levels in the District's drinking water was confirmed, EPA formed a Technical Expert Working Group (TEWG) to develop a plan to improve the corrosion control treatment, and thereby reduce the lead levels in the drinking water. In addition to EPA and its consultants, the group members included the Washington Aqueduct and DC WASA, their respective consultants, and the District of Columbia Department of Health.

The TEWG recommended that the Aqueduct implement the application of an orthophosphate corrosion inhibitor as a method to reduce the drinking water lead levels. In June 2004, the Aqueduct initiated the orthophosphate treatment in a part of the distribution system to determine if the treatment might have any unanticipated effects on water quality. After it was determined that there very few problems in the test area, the Aqueduct implemented full system treatment in August 2004. DC WASA and the Aqueduct will continue their testing programs to determine if other treatment options might be beneficial.

LCR Compliance Determination

In response to the increased concern about lead in drinking water and the implementation of the SDWA in the District of Columbia, Region III conducted several intensive reviews of compliance reports submitted by DC WASA over the past several years. Region III also reviewed records maintained by DC WASA and the Aqueduct. These reviews found deficiencies in the reports and the reporting process which were not noted previously. Some of these deficiencies were determined to be violations of the SDWA. In order to document these violations and to insure that steps would be taken to prevent future problems, Region III issued an Administrative Order for Compliance on Consent (AO) to DC WASA on June 17, 2004. The AO addresses violations that occurred from 1998 through 2003. In addition to a listing of the violations, the AO includes remedial actions required of DC WASA. A copy of the AO can be found on EPA's web site at www.epa.gov/dclead/aowasa617.pdf.

Appendix A is a table that summarizes the violations and provides references to the AO. The violation types include monitoring, reporting, lead public education, lead service line replacement and public notification.

Perhaps the most significant violation identified in the AO (Paragraphs 50-52), is DC WASA's failure to report six tap sample results, and to include these results in the 90th percentile calculation for lead for the July 1, 2000 to June 30, 2001 monitoring period. If DC WASA had included them, they would have exceeded the lead AL a year earlier than July 2002. DC WASA would have been required to begin follow-up actions in 2001. Thus, the AO includes violations for their failure to conduct the follow-up actions as well as the reporting violation.

The violations which occurred in calendar year 2003 are described below:

Lead and Copper Tap Sampling

DC WASA conducted lead and copper tap sampling at customers' taps during two 6-month monitoring periods (January 1 to June 30, 2003 and July 1 to December 31, 2003). Although DC WASA collected the required number of samples in each period, the system failed to document the criteria for each sample site. DC WASA also failed to document the reasons for changing sample sites from one monitoring period to the next, and to submit the monitoring reports to EPA on time.

Public Education

Although DC WASA implemented an annual lead public education program in 2003, it failed to meet all of the requirements of the LCR. The notice printed on water bills issued on or about September 29, 2003 did not include the language required by the LCR. The public service announcements (PSAs) submitted to all of the local radio and television stations, and the PSA printed in *The Washington Post* on September 29, 2003, did not include the required language. Also, DC WASA failed to issue PSAs every six months for the compliance period ending Septemebr 30, 2003.

Lead Service Line Replacement

As mentioned previously, EPA discovered that several hundred of the 1,241 LSLs which were considered to have been replaced during the October 1, 2002 to September 30, 2003 compliance period had been sampled using an incorrect protocol. EPA determined that these LSLs could not be considered as "replaced" and that DC WASA had not complied with the LSLR requirements for this compliance period. In order to document this violation and to require remedial actions by DC WASA, Region III issued a Supplemental Administrative Order for Compliance on Consent (AO) to DC WASA on January 14, 2005. A copy of the supplemental AO can be found on EPA's web site at www.epa.gov/dclead/aowasa_supplement_011905.pdf. Also, the annual LSLR Program Report for this compliance period was submitted late.

After a LSL is partially replaced, the LCR requires that the water system collect a sample from the service line within 72 hours after the completion of the partial replacement. This sample is required because partial LSL replacement may temporarily raise the lead level in the water passing through the line. After the water system receives the sample result, that information must be delivered to the residents within three business days so they can take the appropriate measures to minimize their exposure to lead in their drinking water. During the October 1, 2003 to September 30, 2003, DC WASA failed to collect many of these follow-up samples within 72 hours.

Public Notification

DC WASA failed to issue the public notifications pertaining to the above referenced violations as required by the drinking water regulations.

Reporting

DC WASA failed to submit copies of the public notifications to EPA. Also, DC WASA failed to submit the certification for the delivery of their Consumer Confidence Report to EPA by October 1, 2003.

PWSS Program Activities in the District of Columbia

EPA Region III's Water Protection Division works closely with the Washington Aqueduct and DC WASA in the implementation of the PWSS Program in the District. The Region has provided, and is continuing to provide, services to the District such as the following:

- Training for water treatment plant and distribution system operators.
- Training for distribution system maintenance and repair personnel.
- Sanitary surveys of the water treatment, storage and distribution systems.
- Sanitary surveys of several large water users in the District.
- Drinking water survey of day care centers in the District.
- Assistance to the DC Department of Health in conducting a source water assessment of the Potomac River.
- Technical assistance to the Aqueduct and DC WASA as needed.

During calendar year 2003, Region III assisted the Aqueduct and DC WASA in developing plans for the issuance of the District's Consumer Confidence Report (CCR), which was delivered in June 2003. Region III also worked with the Aqueduct, DC WASA, and the Virginia customers concerning water system security issues. EPA has provided funding to these water systems to evaluate their security procedures, refine their emergency operation plans, and to upgrade their cyber security systems.

Additional information about the PWSS Program in the District, or extra copies of this report may be obtained by contacting:

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Copies of the Annual Compliance Reports for Public Water Systems in the District of Columbia for 2003 and previous years may be found on the web at:

www.epa.gov/reg3wapd/drinkingwater/links.htm

Appendix A Summary of Drinking Water Regulation Violations Included in the Administrative Order for Compliance on Consent (June 17, 2004) and the Supplemental Administrative Order for Compliance on Consent (January 14, 2005) Issued by EPA Region III to the District of Columbia Water and Sewer Authority

Administrative Order Paragraph Number	Drinking Water Regulation Citation (40 C.F.R.)	Reporting Period	Violation Description	Violation Type
21	141.86(c) and (d)	1/1/99 to 6/30/99	Insufficient number of lead and copper tap samples collected during 6-month monitoring period	Monitoring
28	141.84(d)(1)	10/1/02 to 9/30/03 10/1/03 through 3/4/04	Failure to collect follow-up samples after partial lead service line replacement	Monitoring
31	141.85(b)	9/1/02-10/31/02	Public service announcements (PSAs) for lead public education did not include required language	Public Education
32	141.85(b)	10/1/02-9/30/03	PSA for lead public education submitted to local radio and television stations on 9/29/03 did not include required language	Public Education
33	141.85(c)(3)	10/1/02 to 9/30/03	PSA for lead public education printed in *The Washington Post* on 9/29/03 did not include required language; failure to issue PSAs every six months for the compliance period ending 9/30/03	Public Education
35	141.85(c)(2)(i)	10/1/02 to 9/30/03	Notice printed on water bills issued on or about 8/29/03 did not include required language	Public Education

Administrative Order Paragraph Number	Drinking Water Regulation Citation (40 C.F.R.)	Reporting Period	Violation Description	Violation Type
38	141.90(a)(1)(i)	7/1/98 to 12/31/98 1/1/99 to 6/30/99 7/1/99 to 6/30/00 7/1/00 to 6/30/01 7/1/01 to 6/30/02 1/1/03 to 6/30/03 7/1/03 to 12/31/03	Sample site selection criteria were not included in the monitoring reports	Monitoring
42	141.90(a)(1)(v)	7/1/98 to 12/31/98 1/1/99 to 6/30/99 7/1/99 to 6/30/00 7/1/00 to 6/30/01 7/1/01 to 6/30/02 1/1/03 to 6/30/03 7/1/03 to 12/31/03	Explanations were not submitted to document sample sites that were changed or not sampled during these monitoring periods	Monitoring
43	141.90(a)	7/1/01 to 6/30/02 1/1/03 to 6/30/03 7/1/03 to 12/31/03	Tap sample monitoring reports were submitted late	Reporting
44	141.90(f)	9/1/02-10/31/02	Lead public education program report was submitted late	Reporting
46	141.90 (e)(2) and (3)	10/1/02 to 9/30/03	Lead service line replacement program report was submitted late	Reporting

Administrative Order Paragraph Number	Drinking Water Regulation Citation (40 C.F.R.)	Reporting Period	Violation Description	Violation Type
49	141.86(d)(4)(iv)	7/1/00 to 6/30/01	Insufficient number of lead and copper tap samples collected during monitoring period	Monitoring
50	141.90	7/1/00 to 6/30/01	Failed to report the lead and copper values for six samples	Reporting
51	141.86(e)	7/1/00 to 6/30/01	Failed to include the lead and copper values for six samples in the 90th percentile calculations	Reporting
52	141.90(a)(iv)	7/1/00 to 6/30/01	Failed to report the exceedance of the lead action level for this monitoring period	Reporting
54	141.80(f) and 141.84	7/1/00 to 6/30/01 10/1/02 to 9/30/03	Failed to replace 7% of the total number of lead service lines within 12 months of exceeding the lead action level (Note: the violation for the 10/1/02 to 9/30/03 period is included in a supplement to the AO issued in January 2005)	Lead Service Line Replacement
55	141.90(e)(2) and (3)	7/1/00 to 6/30/01	Failed to report the total number of lead service lines replaced during the 12 months following the exceedance of the lead action level	Reporting
57	141.85(c)(2)(i),(ii) and (iii); 141.85(c)(3)	7/1/00 to 6/30/01	Failed to complete a lead public education program within 60 days of exceeding the lead action level	Public Education
59	141.85(c)(2)(iv)	7/1/00 to 6/30/01	Failed to issue public service announcements for lead public education within 60 days of exceeding the lead action level	Public Education

Administrative Order Paragraph Number	Drinking Water Regulation Citation (40 C.F.R.)	Reporting Period	Violation Description	Violation Type
60	141.155(c)	7/1/03	Failed to submit Consumer Confidence Report delivery certification by 10/1/03	Reporting
61	141.201	7/1/98 to 12/31/98 1/1/99 to 6/30/99 7/1/99 to 6/30/00 7/1/00 to 6/30/01 7/1/01 to 6/30/02 1/1/03 to 6/30/03 7/1/03 to 12/31/03	Failed to issue required public notification for monitoring and/or reporting violations	Public Notification
62	141.201(c)(3)	7/1/98 to 12/31/98 1/1/99 to 6/30/99 7/1/99 to 6/30/00 7/1/00 to 6/30/01 7/1/01 to 6/30/02 1/1/03 to 6/30/03 7/1/03 to 12/31/03	Failed to submit copies of public notifications for monitoring and/or reporting violations	Reporting

Supplemental Administrative Order Paragraph Number	Drinking Water Regulation Citation (40 C.F.R.)	Reporting Period	Violation Description	Violation Type
12	141.84(b), (c) and (g)	10/1/02 to 9/30/03	Failed to replace 7% of the total number of lead service lines within 12 months of exceeding the lead action level	Lead Service Line Replacement
12	141.90(e)	10/1/02 to 9/30/03	Failed to report the total number of lead service lines replaced during the 12 months following the exceedance of the lead action level	Reporting

Appendix B
Violations Table
(with SDWIS Codes)

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2105	2,4-D	0.07	0	0			0	0
2265	Acrylamide				0	0		
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2964	Dichloromethane	0.005	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2950	**Total trihalomethanes**	**0.080**	**0**	**0**			**0**	**0**

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Inorganic Contaminants							
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.010	0	0			0	0
1094	Asbestos	7 million fibers/ℓ ≤ 10 µm long	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as Nitrogen)	0	0			0	0
1041	Nitrite	1 (as Nitrogen)	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1045	Selenium	0.05	0	0			0	0
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Radionuclide MCLs							
4000	**Gross alpha**	**15 pCi/ℓ**	**0**	**0**			**0**	**0**
4010	**Radium-226 and radium-228**	**5 pCi/ℓ**	**0**	**0**			**0**	**0**
4101	**Gross beta**	**4 mrem/yr**	**0**	**0**			**0**	**0**
	Subtotal		**0**	**0**			**0**	**0**

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	**Acute MCL violation**	**Presence**	**0**	**0**				
22	**Non-acute MCL violation**	**Presence**	**0**	**0**				
23,25	**Major routine and follow up monitoring**						**0**	**0**
28	**Sanitary survey[2]**						**0**	**0**
	Subtotal		**0**	**0**			**0**	**0**

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Surface Water Treatment Rule							
	Filtered systems							
36	**Monitoring, routine/repeat**						**0**	**0**
41	**Treatment techniques**				**0**	**0**		
	Unfiltered systems							
31	**Monitoring, routine/repeat**						**Not applicable**	**Not applicable**
42	**Failure to filter**				**Not applicable**	**Not applicable**		
	Subtotal				**0**	**0**	**0**	**0**

State:	District of Columbia
Reporting Interval:	January 1, 2003 to December 31, 2003

SDWIS Codes		MCL (mg/ℓ)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Lead and Copper Rule							
51	**Initial lead and copper tap M/R**						**0**	**0**
52	**Follow-up or routine lead and copper tap M/R**						**0**	**0**
58,62	**Treatment Installation**				**0**	**0**		
64	**Lead Service Line Replacement**				**1***	**1**		
65	**Public education**				**1***	**1**		
	Subtotal				**2**	**1**	**0**	**0**

***These violations occurred during the October 1, 2002 to September 30, 2003 compliance period. The violation dates are listed in SDWIS as October 1, 2002.**

1. Values are in milligrams per liter (mg/ℓ), unless otherwise specified.

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the "Surface Water Treatment Rule" are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system's failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system's failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system's failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or *E. coli*, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.